Transformations in Lighting
2011 DOE SOLID-STATE LIGHTING R&D WORKSHOP

February 1–3, 2011
Marriott Mission Valley • San Diego, CA

Workshop Agenda

DAY 1 — Tuesday, February 1

11:00 a.m.	*Registration Opens*
1:00 p.m.	**Welcome & Introduction** *James Brodrick, U.S. Department of Energy*
1:15 p.m.	**Keynote: Accelerating Market Adoption of SSL** As more and more high-performance, high-efficiency SSL products move to market, what is really needed to accelerate adoption and realize significant energy savings? *Greg Merritt, Cree, Inc.*
2:00 p.m.	**Panel 1: SSL Technology—Today and Tomorrow** This panel will take a closer look at the status of SSL technology and key issues that impact market adoption. CALiPER analysis of today's products reveals technology, performance, and economic issues that affect market acceptance. Meanwhile, SSL technology continues to evolve and redefine how we think about lighting, enabling new form factors and novel approaches to lighting systems that will broaden its appeal and energy saving impact. Moderator: *James Brodrick, U.S. Department of Energy* *Marc Ledbetter, Pacific Northwest National Laboratory* *Mark Hand, Acuity Brands Lighting* *Jim Anderson, Philips Color Kinetics*
3:30 p.m.	*Refreshment Break*
4:00 p.m.	**A Fresh Look at Priorities—The DOE SSL R&D Multi-Year Plan** A preview of proposed updates to the DOE SSL R&D multi-year plan, including feedback from the Fall 2010 Roundtable discussions on R&D priorities. *Fred Welsh, Radcliffe Advisors*
4:30 p.m.	**DOE SSL Solicitations and the Selection Process** A look at the DOE selection process for SSL R&D projects, along with straightforward guidance on how to assemble a comprehensive proposal for DOE funding. *Joel Chaddock, National Energy Technology Laboratory*
5:15 p.m.	**Optional Tour of Local LED Lighting Installations** *Sponsored by California Center for Sustainable Energy* Visit a selection of nearby indoor LED lighting installations.

DAY 2 — Wednesday, February 2

7:30 a.m.	*Continental Breakfast*
8:00 a.m.	**Panel 2: Lessons from the Field** Lessons from real-world installations continually expand our knowledge of SSL technology and related issues—from product design and installation issues to color, dimmers, and drivers. This panel will share lessons learned from recent SSL installation experiences and set the stage for more in-depth discussions to follow. Moderator: *Bruce Kinzey, Pacific Northwest National Laboratory* *Scott Rosenfeld, Smithsonian Institution* *Michael Souter, Luminae Souter Associates, LLC* *Greg Sullivan, Efficiency Solutions*
9:30 a.m.	**DOE SSL Research & Development Program Update** An overview of the DOE SSL R&D portfolio, budget, and areas of focus, with recognition of four project teams making significant contributions in 2010. *James Brodrick, U.S. Department of Energy* *Cree, Inc.* *Lightscape Materials, Inc.* *OSRAM Sylvania* *Universal Display Corporation*
10:00 a.m.	*Refreshment Break*
10:30 a.m.	**Invited Presentations on R&D Projects** Invited talks highlight a sampling of R&D projects tackling particularly tough challenges with the potential for game-changing results. ***Solution-Processable Transparent Conductive Hole Injection Electrode for OLED SSL*** *Florian Pschenitzka, Cambrios Technologies Corporation* ***Nitride- and Oxynitride-Based Phosphors for Solid-State Lighting*** *Yongchi Tian, Lightscape Materials, Inc.* ***130 lm/W, 1000 lm High-Power, Warm White LED for Illumination*** *Decai Sun, Philips Lumileds Lighting* ***Low-Cost Integrated Substrate for OLED Lighting Development*** *Abhinav Bhandari, PPG Industries* ***Low-Cost, Highly Lambertian Reflector Composite for Improved LED Fixture Efficiency and Lifetime*** *Eric Teather, WhiteOptics*
12:00 p.m.	*Lunch*

1:00 p.m.	**Panel 3: Novel Lighting Concepts for Large Interior Spaces** New form factors using LED and OLED lighting may change the way we light large areas like office and public spaces. This panel will look at novel luminaire concepts as well as new approaches for smart lighting systems that integrate electronics and controls for maximum performance and energy savings. Moderator: *Norman Bardsley, Bardsley Consulting* *Terry Clark, Finelite, Inc.* *Kieran Drain, Rambus Inc.* *Peter Ngai, Acuity Brands Lighting*
2:30 p.m.	*Refreshment Break*
3:00 p.m.	**LED/OLED Track Sessions: Hot Topics** Track talks will explore topics of interest that emerged in the Roundtable discussions, and set the stage for more in-depth discussions tomorrow. **LED Track Sessions** will explore novel architectures and materials for reducing droop, new packaging and materials, integrated functionality, and more. Moderator: *Steve Bland, SB Consulting* *Mike Krames, Soraa, Inc.* *Jeff Tsao, Sandia National Laboratories* *Bob Karlicek, Smart Lighting Engineering Research Center, RPI* *Fred Maxik, Lighting Science Group* **OLED Track Sessions** will explore methods for improving light extraction, extending lifetime, increasing brightness, and more. Moderator: *Lisa Pattison, SSLS, Inc.* *Ching Tang, University of Rochester* *Joe Shiang, GE Global Research* *Mathew Mathai, Plextronics* *Franky So, University of Florida* *Tom Munters, Philips*
5:00–7:00 p.m.	**Poster Session/Reception for All DOE-Funded Research & Development Projects** More than 30 project posters will be presented by research team representatives, providing an opportunity to browse and ask questions of America's leading scientists. *Sponsored by the Next Generation Lighting Industry Alliance*

DAY 3 — Thursday, February 3

7:30 a.m.	*Continental Breakfast*
8:00 a.m.	**Specifying LED Lighting Solutions** Insights from a lighting designer on why it's so challenging to specify and install LED lighting solutions today, and what is needed to accelerate market acceptance. *Derry Berrigan, Derry Berrigan Lighting Design*
8:45 a.m.	**LED/OLED Track Sessions** (continued) Attendees can dig deeper into Wednesday's hot topics, discussing key issues and how they relate to the proposed priority tasks from the updated multi-year R&D plan. **LED Track Session** Moderators: *Steve Bland, SB Consulting* *Morgan Pattison, SSLS, Inc.* Panelists: *Mike Krames, Soraa, Inc.* *Jeff Tsao, Sandia National Laboratories* *Bob Karlicek, Smart Lighting Engineering Research Center, RPI* *Fred Maxik, Lighting Science Group* **OLED Track Session** Moderators: *Norman Bardsley, Bardsley Consulting* *Lisa Pattison, SSLS, Inc.* Panelists: *Ching Tang, University of Rochester* *Joe Shiang, GE Global Research* *Mathew Mathai, Plextronics* *Franky So, University of Florida* *Tom Munters, Philips* *Mike Hack, Universal Display Corporation*
10:00 a.m.	*Refreshment Break*
10:30 a.m.	**LED/OLED Track Sessions** (continued) Further discussion of key issues and how they relate to the proposed priority tasks from the updated multi-year R&D plan.
12:00 p.m.	*Lunch*
1:00 p.m.	**Panel 4: Characterizing Color—What's All the Fuss?** Color quality and consistency are key to customer satisfaction. This panel will look at the basics of characterizing color, plus some of the issues emerging as SSL matures: color uniformity (from luminaire to luminaire, and also in terms of distribution) and color shift (over time and temperature). Moderator: *Fred Welsh, Radcliffe Advisors* *Wendy Davis, National Institute of Standards and Technology* *Lorne Whitehead, University of British Columbia* *Ralph Tuttle, Cree, Inc.* *Mark Pugh, Xicato*
2:30 p.m.	*Refreshment Break*
3:00 p.m.	**Panel 5: Driving Innovation and Creative Solutions with Competitions** A look at how competitions drive technology advances, market adoption, and energy savings, plus new directions that look beyond the bulb and take advantage of the unique potential of LED and OLED technology. Moderator: *Marc Ledbetter, Pacific Northwest National Laboratory* *Liesel Whitney-Schulte, Focus on Energy* *Makarand "Chips" Chipalkatti, OSRAM Sylvania* *John Campsmith, Philips Wide-Lite*
4:30 p.m.	*Wrap-Up and Adjourn*